UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

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                                         )
SKYLINE SOFTWARE SYSTEMS, INC.,          )
                                         )
                Plaintiff,               )    CIVIL ACTION NO.
                                         )    06-10980-DPW
                v.                       )
                                         )
KEYHOLE, INC. and GOOGLE, INC.,          )
                                         )
                Defendants.              )
_____)

MEMORANDUM AND ORDER
March 7, 2007

    Plaintiff, Skyline Software Systems, Inc. ("Skyline"), and

Defendants, Keyhole, Inc. and Google, Inc. ("Google"), have each

moved for summary judgment regarding infringement and validity of

United States Patent No. 6,496,189 (the "'189 patent").  The '189

patent, owned by Skyline, describes a method and apparatus for

streaming three-dimensional terrain data over a network, using

data blocks arranged in a hierarchical data structure to improve

performance.  Skyline has alleged that Google software for three-

dimensional terrain visualization, specifically Google Earth,

infringes the '189 patent.  For the reasons set forth below, I

find as a matter of law that Google does not infringe the '189

patent, and will grant the Google motion for summary judgment as

to infringement and deny that of Skyline.  Because my reasoning

may influence the parties' approach to the validity question, I

will deny the summary judgment motions as to validity and
invalidity, without prejudice to rebriefing and reassertion on or
before April 20, 2007.

## I. SUMMARY JUDGMENT

Summary judgment is appropriate when "the pleadings,
depositions, answers to interrogatories, and admissions on file,
together with the affidavits, if any, show that there is no
genuine issue as to any material fact and that the moving party
is entitled to judgment as a matter of law." Fed. R. Civ. P.
56(c).  Summary judgment is as appropriate in a patent case as it
is in any other matter.  *Barmag Barmer Maschinenfabrik AG v.
Murata Mach. Ltd*., 731 F.2d 831, 835 (Fed. Cir. 1984).  Once the
moving party shows that there is no genuine issue of material
fact, the nonmovant must produce evidence to show that a
trialworthy dispute exists.  *Rathbun v. Autozone, Inc*., 361 F.3d
62, 66 (1st Cir. 2004).

A fact is "material" if it has the "potential to affect the
outcome of the suit under the applicable law."  *Santiago-Ramos v.
Centennial P.R. Wireless Corp*., 217 F.3d 46, 52 (1st Cir. 2000)
(internal citation omitted).  "A 'genuine' issue is one supported
by such evidence that 'a reasonable jury, drawing favorable
inferences,' could resolve it in favor of the nonmoving party."
*Triangle Trading Co., Inc. v. Robroy Indus., Inc*., 200 F.3d 1, 2
(1st Cir. 1999) (quoting *Smith v. F.W. Morse & Co*., 76 F.3d 413,

427 (1st Cir. 1996)). "[C]onclusory allegations, improbable

inferences, and unsupported speculation," are insufficient to

establish a genuine dispute of fact.  *Velez-Rivera v. Agosto-*

*Alicea*, 437 F.3d 145, 154 (1st Cir. 2006) (internal citation

omitted).  In ruling on a motion for summary judgment, a court

must view "the facts in the light most favorable to the non-

moving party, drawing all reasonable inferences in that party's

favor."  *Pacific Ins. Co., Ltd. v. Eaton Vance Mgmt.*, 369 F.3d

584, 588 (1st Cir. 2004) (internal citation omitted).

Cross-motions for summary judgment do not alter the basic

summary judgment standard, but rather require courts to determine

whether either of the parties deserves judgment as a matter of

law on facts that are not disputed.  *See Adria Int'l Group, Inc.*

*v. Ferre Dev., Inc.*, 241 F.3d 103, 107 (1st Cir. 2001); *Wightman*

*v. Springfield Terminal Ry. Co.*, 100 F.3d 228, 230 (1st Cir.

1996). Thus, in deciding cross-motions for summary judgment,

courts must consider each motion separately, drawing all

reasonable inferences against each movant in turn.  *Reich v. John*

*Alden Life Ins. Co.*, 126 F.3d 1, 6 (1st Cir. 1997).

## II. INFRINGEMENT ANALYSIS

Determination of patent infringement entails a two-step

analysis: (1) claim construction, a question of law; and (2)

comparing the accused product to the construed claims, a question

of fact.  *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 984

(Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).  I took the first

step when I construed the disputed terms in the '189 patent in

March 24, 2006, *Skyline Software Systems, Inc. v. Keyhole, Inc.*,

421 F.Supp.2d 371 (D. Mass. 2006) and November 16, 2006

Memoranda.  The summary judgment motions before me with respect

to infringement require that I now compare the asserted claims of

the '189 patent to the accused Google Earth products.[1]

1.  Legal Standard

The legal standard for patent infringement is firmly

settled: "[t]o prove infringement, the patentee must show that

the accused device contains each limitation of the asserted

claim, . . . or an equivalent of the limitation."  *Beckson Marine*

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[1] The parties disagree over how the accused Google Earth
products should be evaluated - individually or as a unified
system.  Skyline's First Amended Complaint of November 9, 2006
sheds little light on the issue.  It simply states:
    On information and belief, the products of which
    Skyline currently is aware that infringe the '189
    Patent include, but are not limited to: Keyhole Pro,
    Keyhole 2 Pro, Keyhole LT, Keyhole 2 LT, Keyhole NV,
    Keyhole 2 NV, Earthviewer, Keyhole Enterprise Client,
    Keyhole 2 Enterprise Client, Keyhole EC, Keyhole 2 EC,
    Keyhole's Enterprise Solutions products, Keyhole 2
    Fusion LT, Keyhole 2 Server, Google Earth, Google Earth
    Plus, Google Earth Pro, Google Earth Enterprise
    Solution (including Google Earth Fusion, Google Earth
    Server and Google Earth Enterprise Client), the Geo
    Coder Server and any predecessor or successor products
    and related software services provided by Defendants in
    connection with these products.
First Amended Complaint, ¶8.
    For purposes of this summary judgment analysis, I have
considered the evidence in the light most favorable to Skyline,
and have treated the accused products as a unified whole.

*Inc. v. NFM, Inc.*, 292 F.3d 718, 724 (Fed. Cir. 2002).    Every

limitation recited in the claim must appear in the accused

device, so that "the properly construed claim reads on the

accused device exactly."  *KCJ Corp. v. Kinetic Concepts., Inc.*,

223 F.3d 1351, 1358 (Fed. Cir. 2000), *citing Amhil Enters., Ltd.*

*v. Wawa, Inc.*, 81 F.3d 1554, 1562 (Fed. Cir. 1996).    If any claim

limitation is absent from the accused product, "there is no

literal infringement as a matter of law."  *Bayer AG v. Elan*

*Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000),

*cert. denied*, 531 U.S 993 (2000).    When material facts pertaining

to the operation of an accused device are undisputed, the issue

of infringement is particularly susceptible to summary judgment,

because infringement is then a pure question of law.  *General*

*Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 983 (Fed. Cir.

1997).

    2.   <u>Analysis</u>

    Skyline has moved for summary judgment of infringement

specifically on Claims 1 and 12, while Google has moved for

summary judgment of noninfringement on all asserted claims of the

'189 patent, *i.e.*, Claims 1-3, 5, 7-9, 11-12, 16, 18-19, and 21-

24.    I will focus on certain salient limitations of Claims 1 and

12, because, as will appear, disposition of those claims is

sufficient to resolve the infringement dispute.

    *a.    Claim 1*

Claim 1 reads:

> A method of providing data blocks describing
> three-dimensional terrain to a renderer, the data
> blocks belonging to a hierarchical structure which
> includes blocks at a plurality of different
> resolution levels, the method comprising:
>    receiving from the renderer one or more
>       coordinates in the terrain along with
>       indication of a respective resolution level;
>    providing the renderer with a first data block
>       which includes data corresponding to the one
>       or more coordinates, from a local memory;
>    downloading from a remote server one or more
>       additional data blocks at a resolution level
>       higher than the resolution level of the first
>       block which includes data corresponding to
>       the one or more coordinates if the provided
>       block from the local memory is not at the
>       indicated resolution level.

(col. 16, ll. 28-43).  The method claimed, at a minimum, has

three broad elements or limitations: "receiving from the

renderer" specific information, "providing the renderer"

particular data, and "downloading from a remote server" certain

information when specific conditions are satisfied.  To prevail

on its summary judgment motion, Skyline must demonstrate that

there is no genuine issue of disputed fact to contradict the

proposition that the accused Google Earth products contain each

of the limitations in Claim 1, either literally or under the

doctrine of equivalents.  In contrast, to prevail on its summary

judgment motion, Google must simply show that Skyline cannot meet

its burden on at least one limitation of the claim.

*(1)  receiving from the renderer one or more*
*coordinates in the terrain along with indication*
*of a respective resolution level*

*(a)  "receiving from the renderer"*

The first, and perhaps most critical, question that arises in evaluating infringement of Claim 1 is whether the accused Google Earth products contain a "renderer."  As defined in the *Markman* Order of March 24, 2006, a renderer is a:

> software and/or hardware object that performs at least the following functions: (1) determining and providing to another object the required coordinates in the terrain along with a respective resolution level; (2) receiving the data blocks corresponding to the specified coordinates; and (3) using the received data blocks to display a three-dimensional image.

421 F.Supp.2d 371, 388 (D. Mass. 2006).  The second *Markman* Order of November 16, 2006 clarified that "receiving from the renderer" means "something distinct from the renderer receiving from the renderer."  Memorandum and Order of November 16, 2006, at 10.  In that Memorandum, I noted that:

> Skyline has expressed concern over the use of the word "object," which has a specific meaning in the context of computer programming.  "Object," as used in this discussion, should not be read to refer specifically to software objects of the sort used in object-oriented programming.  I use "object" in the more general sense of a "thing," which could be a software object, but need not be.

*Id.* at 9 n.7 (internal citation omitted).

Skyline has not identified any "thing" that corresponds to the renderer as defined in the '189 patent.  Skyline admits as much in its Corrected Memorandum in Support of Its Motion for

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Summary Judgment of Infringement, when it accuses Google of

"quibbling that these three functions [of the renderer] are not

performed by the same 'logical entity' or 'object'."  The demand

that a "renderer" be identifiable as a discrete entity of some

sort is not a quibble, however; it is fundamental to a finding of

infringement.  The '189 patent describes a particular way of

structuring a system for streaming three-dimensional data.  Not

any system that achieves the same result is covered.  To succeed

on its motion for summary judgment, Skyline must show that the

accused Google Earth products infringe on the particular system

described in the '189 patent.  The "renderer" is at the core of

that system.  The failure to identify *some thing* that performs

the functions of the renderer is fatal to Skyline's motion for

summary judgement on Claim 1.[2]

The inverse of the question arises in considering Google's

motion for summary judgment of noninfringement of Claim 1.  Here,

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[2] Skyline's ultimate position, as presented at the summary
judgment oral argument, appears to be that the Google Earth
Client, a "software application, running on the local processor,"
itself "performs the three renderer functions." [Skyline Slide
#29] However, Skyline also suggests that unspecified pieces of
the Google Earth Client source code perform the functions of the
renderer, suggesting a more granular definition. [*Id.*]  In either
formulation, the Skyline position, which I reject, erroneously
conflates the functions of the renderer with the separate thing
that is a renderer.  This takes considerable and unwarranted
poetic license with the *Markman* construction and, as I noted
during the hearing on the motions, calls to mind Yeats' question:
"How can we know the dancer from the dance?"  W. B. Yeats, *Among
School Children*, THE COLLECTED POEMS OF W. B. YEATS, 215, 217 (Richard
J. Finneran ed., rev. 2d ed. 1996).

the question is whether any reasonable fact finder examining this
factual record could find that a "renderer" exists in the accused
Google Earth products.  Even viewing the evidence in the light
most favorable to Skyline and drawing all inferences in its
favor, the undisputed evidence demonstrates that no such renderer
exists in the Google Earth system.

Even if I consider the Google Earth Enterprise suite as a
whole, and view the Google Earth Client as the "renderer,"
Skyline's claim fails, because the Google Earth Server, the non-
renderer entity, does not pass back coordinates in the terrain or
resolution levels to the Google Earth Client, as required by
Claim 1; it passes back files.[3]  Consequently, Skyline must
demonstrate the "renderer" is contained within the Google Earth
Client software, and Skyline has failed to provide any evidence
that it is.  There is simply not any identifiable subset of the
software code that can be analogized to the "renderer," as
described in the '189 patent, particularly given the requirement
that the renderer receive specified information from other
distinct entities.

Skyline identifies several places where *functions or tasks*
required of the renderer are performed.  However, identifying a
set of tasks which are performed is not the same as identifying
an object which performs a set of tasks, even if the end result

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[3] The Google Earth Server is closer to the "remote server"
referenced in Claim 1 than the "renderer."

is the same.  Consider, for example, a coffeemaker.  If a

"coffeemaker" is defined as "an object that (1) heats water by

means of electricity, (2) causes ground coffee to come into

contact with said heated water, and (3) keeps resulting liquid

warm," a standard drip coffeemaker would clearly qualify.  One

might argue over whether an espresso maker would qualify.  It is

clear, however, that a method comprised of a person heating water

in an electric kettle, manually pouring the water into a French

press full of ground coffee, and keeping the resulting cup of

coffee warm on a desk hot plate would not qualify as a

"coffeemaker," even though all of the steps described were

performed.  If the steps are not performed by a single entity,

there is no "object," and hence no "coffeemaker."  Similarly,

even if all of the steps described as part of the renderer are

performed at some point in the Google Earth code, a contention

disputed by Google, Skyline has pointed to no evidence that an

identifiable "renderer" exists.  Consequently, Google is entitled

to summary judgment of noninfringement on the ground that the

accused products do not contain a distinct renderer, as required

by Claim 1.

> (b)   *one or more coordinates in the terrain along*
>       *with indication of a respective resolution*
>       *level*

Summary judgment of noninfringement in Google's favor is

also warranted based on the "one or more coordinates in the

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terrain along with indication of a respective resolution level"

limitation.  Skyline fails to proffer any evidence that terrain

coordinates are passed to the renderer, even assuming for this

purpose that a renderer exists, *along with* an indication of a

*respective* resolution level.  Instead, Skyline elides the

language of the '189 patent, substituting "indication of a

resolution level" for "indication of a respective resolution

level," and completely ignores the requirement that the

coordinates supplied be linked to a particular resolution level.

Skyline identifies places where coordinates are used in the

Google Earth code, and it identifies places where resolution

levels are indicated.  However, Skyline identifies no situation

where the coordinates are provided *along with* a corresponding

resolution level, as required by the '189 patent, and the prior

claim constructions.[4]  Consequently, Google is entitled to

summary judgment on this ground.[5]

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[4] *See* 421 F.Supp.2d at 385, construing "indication of a
respective resolution level" as "the identification of the
particular resolution level of the data required."

[5] Because Skyline has failed to proffer sufficient evidence
to avoid summary judgment on noninfringement, its own motion for
summary judgment must fail on this limitation, as a matter of
course.

> (2)   *providing the renderer with a first data block*
>        *which includes data corresponding to the one or*
>        *more coordinates, from a local memory*

The parties barely address this limitation, except to
continue arguing over whether a "renderer" exists to have
something provided to it.  As discussed above, Skyline has failed
to produce countervailing evidence that the accused Google Earth
products contain a "renderer," as the term is used in the '189
patent.  Consequently, Google is entitled to summary judgment of
noninfringement, based on this claim limitation.

> (3)   *downloading from a remote server one or more*
>        *additional data blocks at a resolution level*
>        *higher than the resolution level of the first*
>        *block which includes data corresponding to the one*
>        *or more coordinates if the provided block from the*
>        *local memory is not at the indicated resolution*
>        *level*

Neither party disputes that data blocks are downloaded from
a remote server.  The dispute arises over whether the test
performed by Google Earth, a "greater than" test, is sufficient
to satisfy the claim limitation that the provided block "is not
at" the desired resolution level.  I find that it is not.

The parties agree that Google performs a "greater than" test
to evaluate whether to continue downloading new data blocks from
the server.  Skyline argues that this test satisfies the '189
patent claim, because "the claim contains neither the 'equal to'
nor the 'greater than' language."  While true, this argument
misses the point.  The '189 patent only requires that the

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resolution level of the provided block *not equal* the desired

maximum resolution level.  Presumably, if the Google Earth

software did both a "greater than" and "less than" test, the

claim limitation would be satisfied, even though no "equal to"

test, as such, was directly performed.  However, Google Earth

does not perform in that manner.  Because only a "greater than"

test is performed, downloading continues when the block provided

is *less than* the desired resolution level, but also when it is

*equal to* the desired resolution level.[6]  Therefore, the accused

products do not contain a limitation that downloading only

happens when "the provided block . . . is not at the indicated

resolution level."

Instead, additional blocks are downloaded in the allegedly

infringing Google method when the provided block *is* at the

indicated resolution level, and, in some cases, when it *is not* at

the desired resolution level, *i.e.*, when the provided block is of

lower than desired resolution.  Because one key purpose of the

'189 patent is to minimize the download of excess data (outside

of the potentially useful nearby data), this difference is

significant.  Downloading one additional resolution level of

data--the level downloaded when the resolution of the indicated

block is equal to the desired resolution level--would generally

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[6] If X is greater than Y, necessarily X does not equal Y.
However, if X is not greater than Y, then X is *either* less than
*or* equal to Y.  (5 > 3, but 2 ≯ 3 and 3 ≯ 3)

result in four times as much data as was strictly required for

display at the target resolution level, given the quad tree

structure (where each child level contains four times as many

blocks as the parent level).  In the context of the '189 patent,

this increase is quite significant.[7]

Because the material facts as to this limitation are not in

dispute, in that both parties agree Google Earth performs a

"greater than" test, infringement as to this limitation of Claim

1 may be resolved as a question of law.  I find that the accused

Google Earth products do not infringe this limitation as a matter

of law, because the accused products continue downloading

additional blocks even when the desired resolution level has been

reached (and do not stop until a higher than desired level has

been reached).  Consequently, I will grant Google's motion for

summary judgment of noninfringement on this basis.

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[7] The illustrative situation provided by Skyline at the
summary judgment oral argument, where the desired resolution
level is 14.8 [Skyline Slide #33], is unconvincing for at least
two reasons.  First, it does not address how the '189 patent and
Google Earth treat whole number resolution levels.  For a desired
resolution level of 14, for example, the '189 patent dictates
that downloading must stop when the Level 14 data block is
delivered.  Google Earth, in contrast, would download until the
block greater than Level 14, *i.e.*, Level 15, has been downloaded.
Second, the '189 patent does not seem logically able to handle
non-whole number resolution levels.  Under Skyline's scenario, no
data block with resolution level 14.8 would ever be downloaded,
so the conditional of the '189 patent ("downloading . . . if the
provided block . . . is not at the indicated resolution level")
would *always* be satisfied, meaning downloading would never stop,
even when Level 15 data had been received.

　　　　b.　　*Claim 12*

Claim 12 reads:

> Apparatus for providing data blocks describing
> three-dimensional terrain to a render[er],[8] the
> data blocks belonging to a hierarchical structure
> which includes blocks at a plurality of different
> resolution levels, the apparatus comprising:
>> a local memory which stores data blocks
>> corresponding to coordinates proximal to a
>> current viewpoint of the renderer;
>> a communication link, through which the memory
>> receives the data blocks from a remote
>> server;
>> a processor which receives one or more
>> specified coordinates along with indication
>> of a respective resolution level from a
>> renderer, provides the renderer with a first
>> data block which includes data corresponding
>> to the one or more specified coordinates from
>> a local memory, and downloads over the
>> communication link one or more data blocks of
>> a resolution level higher than the resolution
>> level of the first block which include data
>> corresponding to the one or more coordinates
>> if the first block is not from the indicated
>> level.

(col. 18: 12-31).

　　　Claim 12 tracks the critical elements of Claim 1 (discussed

above), although it describes an apparatus, rather than a method.

Because the evidence establishes there is no "renderer" in Google

Earth, no coordinates are passed along with an associated

resolution level, and downloading continues even when the desired

resolution level has been reached, summary judgment of

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　　　[8] As I have previously noted, "render" appears to be a
typographical error and neither party contends that the term
should be construed as anything other than "renderer."

noninfringement is appropriate on Claim 12, as well.

   c.   *Other Asserted Claims*

Google has moved for summary judgment of noninfringement on all other asserted claims of the '189 patent.  Google argues, and Skyline concedes, that all other claims are essentially dependent on either Claim 1 or Claim 12, so they cannot be infringed if Claims 1 and 12 have not been infringed.  *See* Skyline's Memorandum in Support of Its Motion for Summary Judgment of Validity, p. 7, n. 7 ("The same claim elements from Claims 1 and 12 are contained in all of the other asserted claims of the '189 Patent.")  At a minimum, all other ostensibly independent claims are based on the idea of a renderer providing and receiving data, thus the absence of a renderer in Google Earth is dispositive, and I consequently will grant summary judgment of noninfringement on all other asserted claims of the '189 patent.

### III. CONCLUSION

For the reasons discussed in more detail above, I GRANT Google's motion for summary judgment on noninfringement and DENY Skyline's motion for summary judgment on infringement.  In addition, I DENY both motions for summary judgment on the validity question, WITHOUT PREJUDICE to rebriefing and reassertion on or before April 20, 2007.  No later than April 20, 2007, the parties shall file a joint status report outlining what further steps are necessary to reduce this case to judgment.  The

trial date in this matter set for June 4, 2007 and related pre-
trial orders are vacated.

/s/ Douglas P. Woodlock

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DOUGLAS P. WOODLOCK
UNITED STATES DISTRICT JUDGE